

## **POLLEN POLY MIX PLANT BREEDING METHOD UTILIZING MOLECULAR PEDIGREE ANALYSIS**

### Abstract of the Disclosure

5 The present invention is directed to a plant breeding and testing  
method that utilizes a pollen mixture derived from many male parents in conjunction  
with field trials and molecular pedigree analysis to evaluate breeding values and  
make progeny selections for the next generation of breeding. More specifically the  
plant breeding method involves mixing pollen obtained from a breeding group  
composed of a plurality of parental plants to obtain a pollen polymix. The polymix is  
10 used to pollinate female reproductive structures from parental plants in the breeding  
group to obtain a plurality of progeny seed lots. Each progeny seed lot has seeds  
obtained from a different cross between the pollen polymix and a different parental  
plant. Resultant progeny plants from each seed lot are evaluated using objective  
criteria to obtain a phenotype score. The pedigree of at least some of the progeny  
15 plants, usually those with a desirable phenotype score, is determined using molecular  
parental analysis. Lastly, the pedigree and phenotype score are used to identify elite  
plants for use in a next generation of plant breeding.